

CHAPTER V

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5.1. Conclusion

1. Based on the analysis of the use of chemical control, such as insecticides, fungicides, herbicides, bactericides, and nematicides in shallot farming, it has been proven to provide reasonable profits for farmers, as indicated by a value of 1.85 R/C ratio. The application of various types of pesticides is effective in suppressing pests, diseases, and weeds, thereby increasing production and income. However, while providing quite high yields, the level of efficiency is still below the level of integrated control, to achieve optimal and sustainable results.
2. The use of biological control agents such as *Trichoderma*, *Beauveria bassiana*, and *Bacillus thuringiensis* in shallot farming has been proven to provide reasonable profits, as indicated by a 1.80 R/C ratio. These biological agents are effective in naturally suppressing the development of pathogens and pests, thereby increasing production and farmer income. Furthermore, biological control has a strong influence on farming efficiency and supports environmentally friendly agricultural systems, making it an important alternative to reduce dependence on chemicals and improve farming sustainability.
3. Mechanical/physical control techniques such as crop rotation, dense planting and spacing, and land sanitation have been proven to provide reasonable profits for shallot farming, as indicated by a 1.78 R/C ratio. These techniques can reduce pest and disease sources and create healthier planting conditions, thereby increasing production and farmer revenue. However, their efficiency is relatively lower than other methods, so mechanical/physical control is more effective when combined with other control techniques to achieve more optimal and sustainable results.

4. An integrated pest control technique combining land sanitation, selective pesticide use, and routine monitoring has been proven to provide the highest returns for shallot farming, as indicated by a high R/C ratio of 1.94. This approach is effective in comprehensively controlling pests and diseases, thereby increasing production, efficiently reducing costs, and increasing farmer income. An integrated approach has proven to be the most optimal and sustainable strategy for improving shallot cultivation performance.

5.2. Suggestions

1. It is necessary to conduct more comprehensive follow-up research on pest and disease control techniques in shallot plants, both from technical, ecological, and socio-economic aspects, in order to obtain effective and sustainable control strategies that can be widely applied.
2. The results of the research are expected to be the basis for the development of control technology recommendations that are in accordance with the conditions of the local agroecosystem, so as to support the increase in productivity and welfare of local shallot farmers in Timor Leste.
3. It is necessary to implement Integrated Pest Control (IPM) through the use of healthy seeds, good cultivation, land sanitation, use of natural enemies, and the wise use of pesticides according to the control threshold so that pest and disease control is more effective, efficient, and sustainable.

